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TRIATOMA PHYLLOSOMA USINGERI, A NEW SUBSPECIES OF TRIATOMA FROM MEXICO*

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In an earlier work (Mazzotti and Osorio, 1942), based principally upon several crossing experiments, we proposed that the Mexican triatomas, *Triatoma pallidipennis* (Stål), *Triatoma picturata* Usinger, and *Triatoma mazzottii* Usinger, be considered as subspecies of *Triatoma phyllosoma* (Burmeister). The new combinations would be as follows: *Triatoma phyllosoma pallidipennis*, *Triatoma phyllosoma picturata*, and *Triatoma phyllosoma mazzottii*.

In studying specimens of triatomas collected in Autlán, Jalisco, the place where we (Mazzotti, 1940) had indicated the presence of two different species, we found that the specimens which had been identified as *picturata* are similar structurally to those identified as *pallidipennis*.

According to the key and distribution given by Usinger (1941) the specimens from Jalisco and Colima that have the greater part of the corium whitish correspond to the species *pallidipennis* and those that have the greater part of the corium black, to the species *picturata*.

From the examination of numerous specimens and from the results of new crossing experiments it appears that *picturata* of Autlán, Jalisco (Figure 1) and *pallidipennis* of Autlán, Jalisco (Figure 2) are two variations of the new subspecies described below.

Triatoma phyllosoma usingeri, new subspecies

A large, predominantly black subspecies with scant pilosity on the pronotum.

Length of head, excluding neck region, more than double the greatest width at level of eyes. Antecular portion four times as long as postocular portion. Tylus longer than half the antecular

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length, fusiform, and enlarged on its posterior third. Eyes, seen from above, a little more than half as wide as interocular space, 13::22. Ocelli prominent, each ocellus situated at the anterior end of an oblique elevation. Antennae inserted at middle of anteocular region; the first segment slightly surpassing apex of head; proportion of segments 15:45:40:35. Rostrum with short, fine hairs; curved inward at its basal and middle segments and straight at apical segment; proportion of segments 20:33:12.

Pronotum wider than long, 65::50; its length slightly less than that of head, excluding neck region. Antero-lateral tubercles conical, apically obtuse, projecting outward and forward. Anterior inner tubercles smaller, located near mid-line and near anterior margin. Posterior external tubercles near lateral margin small. Posterior lobe of pronotum with obsolescent wrinkles, inner and outer carinae reduced. Scutellum scarcely broader than long, its posterior prolongation cylindrical-conical in form and rounded at apex.

Hemelytra long, reaching anterior end of last abdominal segment. Connexivum broad and semitransparent at the markings. Under surface covered with short hairs, longer toward front of thorax.

Color black, except on the following regions: neck which has an ochraceous transverse margin; corium which is entirely whitish except for black apical portion and black membranous half of clavus; connexivum except for pale ochraceous markings which correspond in size and position on dorsal and ventral sides.

Size: male, length 31 mm., maximum width (pronotum) 6.5 mm., maximum width (abdomen) 14 mm.; female, length 32 mm., maximum width (pronotum) 7 mm., maximum width (abdomen) 15 mm.

Holotype, male, allotype, female, and six paratypes, in the collection of the Institute of Health and Tropical Diseases, collected by the author in Autlán, Jalisco, with the kind collaboration of Dr. L. E. Villaseñor.

Additional specimens are at hand from Purificación, Jalisco, and from Colima, Col.

Two paratypes are deposited in the U. S. National Museum, two in the Instituto Oswaldo Cruz, and two in the California Academy of Sciences.

In several of the paratypes the corium is mostly black with a whitish area basally and a smaller white area subapically, this last being absent in some specimens. A regular proportion of the specimens have ochraceous on the postero-lateral angles of the pronotum.

This subspecies is dedicated to Dr. R. L. Usinger in recognition of his valuable studies on American triatomas.

Observations. This subspecies is differentiated from *Triatoma phyllosoma pallidipennis* in that the latter has abundant long hairs on the pronotum; *usingeri* has scant hairs on the pronotum and varies in color, the pronotum being entirely black or with ochraceous markings on the posterior angles and the corium also varying in distribution and size of markings. *Pallidipennis* does not exhibit these variations in coloration.

It will be recalled that Stål (1872), in describing *pallidipennis*, did not give the exact locality of origin of the specimen or specimens on which he based his description, merely stating that the species came from Mexico. Nevertheless, the fact that he mentioned pilosity and black color as principal characters seems to justify our conclusions that specimens from the State of Guerrero and adjacent regions be considered as typical.

Structurally *usingeri* is similar to *picturata* but it is differentiated biologically as indicated by the experiments presented below. Likewise the variations in coloration are different in these subspecies and the pale color of *usingeri* is white slightly tinged with yellow whereas the pale color of *picturata* is distinctly orange. The subapical pale spots of the corium of the dark form of *usingeri* are smaller than the corresponding spots in *picturata*.

Crossing experiments. The crossing experiments were conducted using the same methods explained in our previous article.

According to the former experiments (Mazzotti and Osorio, 1942) the crossing of *pallidipennis* (collected in Guerrero and adjacent states) and *picturata* (from Nayarit) produced, among other examples, some specimens which have the appearance of both subspecies (Figure 3) and which should be designated as *T. phyllosoma pallidipennis* x *T. phyllosoma picturata* or the reverse when the male of the pair of parents is *picturata*.

These mixed specimens also have been obtained in crossing experiments with specimens from Autlán. To facilitate the presentation we shall designate these mixed examples as pxp. In table I "*picturata*" and "*pallidipennis*" from Autlán are the forms of *usingeri* which resemble *picturata* and *pallidipennis* respectively.

TABLE I
Crossing Experiments between subspecies of *Triatoma phyllosoma*.

NUMBER	SUBSPECIES CROSSED	RESULTS
Experiment 1	♂ <i>pallidipennis</i> from Apatzingán, Gro. ♀ " <i>picturata</i> " from Autlán, Jal.	Among other specimens are several pxp.
Experiment 2	♂ " <i>pallidipennis</i> " from Autlán, Jal. ♀ <i>picturata</i> from Trapiche, Nay.	Among other specimens are several pxp.
Experiment 3	♂ " <i>pallidipennis</i> " from Autlán, Jal. ♀ " <i>picturata</i> " from Autlán, Jal.	There are no pxp specimens among the descendants.
Experiment 4	♂ <i>picturata</i> from Trapiche, Nay. ♀ " <i>picturata</i> " from Autlán, Jal.	Among other specimens are several pxp.

Results. The result of experiment 1 suggests that the "*picturata*" specimens from Autlán, Jalisco, behave like *picturata* from Trapiche, Nay., since in being crossed with *pallidipennis* of Guerrero, they produced pxp individuals. Experiment 2, in its turn, suggests that "*pallidipennis*" of Autlán behaves like *pallidipennis* from the state of Guerrero, since on being crossed with *picturata* of Nayarit, it produces pxp specimens.

From these two separate experiments it might be concluded that the two subspecies, *pallidipennis* and *picturata*, occur side by side in Autlán, Jalisco.

Nevertheless, experiment No. 3 modifies the above conclusion because the crossing of "*pallidipennis*" and "*picturata*" of Autlán does not produce pxp specimens and furthermore such specimens have not been found in repeated collections from Autlán, notwithstanding the fact that these two supposed species occur together in nature.

Finally, experiment No. 4 shows that "*picturata*" from Autlán is different biologically from *picturata* of Nayarit because crosses between these two result in pxp specimens similar to those obtained in crosses between *pallidipennis* of Guerrero and *picturata* of Nayarit.

Although we have made no crossing experiments between *pallidipennis* of Guerrero and "*pallidipennis*" of Autlán, it is pos-

sible to differentiate one from other by some structural details and by the variations in coloration exhibited by "*pallidipennis*" of Autlán but not seen in *pallidipennis* of Guerrero.

In resumé the subspecies *usingeri* (= "*pallidipennis*" and "*picturata*" of Autlán) exhibits two extreme variations which mix with *pallidipennis* and *picturata*." This subspecies is differentiated from the true *pallidipennis* by structural characters and is separated from the true *picturata* by color and biological characters, the crosses with this last subspecies producing xpx specimens which are not found in the offspring of crosses between the two variations of *usingeri*. Crosses between the two variations of *usingeri* result in offspring which look like the parents.

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HABITS OF *AMBLYCHEILA CYLINDRIFORMIS* SAY

A colony of these was located near the Denver Municipal Airport, Colorado. The species hides during the day in yucca clumps, the greatest emergence being about the time of the first real dark. By circling the clumps with a flashlight they were taken in considerable numbers. A prairie dog colony is found nearby, but in this instance at least, specimens were rarely found around dog holes, the yucca being much the preferred habitat. While *cylindriformis* is carnivorous it may also consume some vegetable matter. Individuals were commonest when the yucca blooms are falling, and were frequently discovered carefully shredding the dried petals. It appeared they were consuming a portion of this material, although this could not be exactly determined since the flashlight usually interrupted their activity. Incidentally, the shredding process is noisy and specimens were often located by sound at quite a distance.—ROBERT W. L. POTTS.